Determining Lead Levels in Drinking Water
Alabama's PK thru 12 Public Schools
Master Plan

Background:

In 2004, the Alabama Department of Environmental Management (ADEM) tested drinking water in approximately twelve separate public schools for lead. The schools tested were geographically located throughout the state and were selected based on their potential to have high levels of lead in the drinking water. All of the tests were below the "action level" for lead and most had lead levels that were non-detectable.

The Alabama Department of Public Health (ADPH) provides public outreach and education, case investigation, and case management services to help prevent lead exposure in Alabama's children. ADPH has several case management services which are made available to the families of children diagnosed with elevated blood lead levels. ADPH provides information about primary and secondary lead poisoning prevention including sources of lead, health effects, reducing lead exposure in the home, safely working with lead, disposal of lead-contaminated waste, health care and nutritional resources, as well as community outreach training. Trained environmentalists provide home visits to identify sources of lead exposure. These visits may include testing painted surfaces, or taking of paint, dust, soil, water or other samples for laboratory analysis. On rare occasions, if the source of elevated blood lead levels in children is not attributable to exposure in the home, ADPH has investigated possible exposure at schools, including drinking water in schools. ADPH has never found drinking water in schools as a source of elevated blood lead levels in children.

Lead in drinking water is caused by corrosive water coming in contact with lead pipe, lead solder, lead service lines, and lead plumbing fixtures within the public water distribution system and private plumbing systems. Under the Safe Drinking Water Act (SDWA), public water systems are required to test for lead at least once every three years at residences deemed to have the greatest potential for high lead levels. The SDWA does not set a maximum contaminant level (MCL) for lead. Instead, the SDWA sets a compliance limit for lead.

The SWDA compliance limit for Public Water Systems (PWSs) is 15 parts per billion (ppb). If sample results indicate that the 90th percentile for lead is above the compliance limit, then the water system has exceeded the "action level". For a PWS an "action level" exceedance requires the water system to take specific actions to reduce the corrosivity of the drinking water and to educate customers about possible health effects and ways to limit exposure. Most public drinking water systems in the state have either installed corrosion control treatment or have naturally non-corrosive water. Because of this, the majority of Alabama's public drinking water systems (PWSs) have not had a problem with lead "action level" exceedances. No Alabama PWS has a chronic problem with lead "action level" exceedances.

There is no federal or Alabama state law requiring testing of drinking water in schools, except for those that operate their own public water system. Alabama has only two such schools. The US Environmental Protection Agency (EPA) suggests that schools voluntarily implement programs for reducing lead in drinking water as part of the school's overall plan for reducing environmental threats. To assist schools in this endeavor, EPA has developed a technical guidance manual for reducing lead in drinking water in schools. The guidance manual is commonly referred to as the "3T" program (https://www.epa.gov/sites/production/files/2015-09/documents/toolkit_leadschools_guide_3ts_leadschools.pdf). The three "Ts" stand for training, testing, and telling: **Training** school officials to raise awareness of

the potential occurrences, causes, and health effects of lead in drinking water; **Testing** drinking water in schools to identify potential problems and take corrective actions as necessary; **Telling** students, parents, staff, and the larger community about monitoring programs, potential risks, the results of testing, and remediation actions. The lead action level under the 3T program is 20 ppb. If any sample result indicates lead is above 20 ppb then the school needs to take remediation actions.

There has been a tremendous amount of interest nation-wide in the quality of public drinking water, particularly with respect to lead levels in drinking water in schools. In an effort to promote public confidence and to help schools minimize their students' and staffs' exposure to possible high levels of lead in drinking water, the Alabama State Department of Education in conjunction with ADEM has decided to implement a voluntary plan to test PK thru 12 public schools in the state for lead over the next three years. The essential elements of this voluntary plan are explained below.

Sampling Locations:

In the Alabama State Department of Education PK thru 12 program, there are approximately 1,500 schools consisting of approximately 8,000 different buildings. The Alabama State Department of Education and ADEM has developed a plan for selecting which buildings and which specific sites within those buildings will be sampled. The sampling plan was developed with deference to EPA sampling protocols outlined in EPA's "3T" program. According to the sampling plan, sampling site selection will be based on plumbing fixture type, age, and accessibility to students and staff. At a minimum, each school shall have at least one water cooler and one kitchen sink tested.

Sample Collection:

Samples will be collected using the protocols listed in EPA's "3T" program. Samples will be collected by either trained school staff, a certified private laboratory, the public water system that serves the school, or an entity approved by ADEM. If school staff take the samples, they must receive appropriate training from either ADEM or the Alabama Rural Water Association (ARWA) prior to taking any sample. Samples may be collected anytime during the school year (i.e. August through May), but preferably during the hotter months (e.g. August, September, April, and May). Sampling will be spread out over a three year period (sooner if resources allow) with pre-kindergarten and elementary schools being sampled first.

Sample Analysis:

Samples will be analyzed in accordance with EPA's "3T" program. Samples will be analyzed by a state-certified private laboratory chosen by the Alabama State Department of Education or the local school system.

Public Disclosure of the Results:

All results will be submitted to ADEM. ADEM will post the results on its eFile system for internet access by the public. Upon request, the Alabama State Department of Education will provide the results to students, staff and the larger community using one or more of the protocols listed in EPA's "3T" program.